Freshwater Fishing Strategies in Early Modern Sami Households

Jesper Larsson and Eva-Lotta Päiviö Sjaunja

Abstract. Fish were absolutely necessary for survival for many households in preindustrial societies. Because fishing waters are considered a common-pool resource, it is difficult to exclude users, and the catch is subtractable. To learn what strategies were in place to avoid fish-stock depletion and secure continuous harvests, we investigated how Indigenous Sami households in Lule lappmark, Sweden, used low-productive freshwaters between 1660 and 1780. Our aim is to show how they conducted fishing and how it was linked to rules for fishing. Our sources are contemporary 17th- and 18th-century accounts and local court rulings. Rules for fishing were developed in a self-governance context. Users and fishing areas were well defined, and users often had exclusive rights to fish. Inheritance was important but not a sufficient prerequisite to obtain access. Our research covers a period during which abundant but low-yield fishing waters per household declined, making it more difficult to survive.

Despite the fact that water and fishing have been at the forefront of discussions about the management of common-pool resources (CPRs) since the 1950s (Gordon 1954; also see Acheson 2003 and Basurto et al. 2013), relatively little attention has been paid to inland, or freshwater, fishing. Historically, freshwater fishing has been of great economic importance around the world for subsistence, trade, and, in some places, taxation. This especially has been true for many Indigenous people, including the Sami, who traditionally lived in northern Scandinavia, Finland, and northwestern Russia (Fjellström 1986; Norstedt et al. 2014). The institutions that were used in these societies to regulate a household's right to harvest fish also determined the sustainability of the fishing regimes and hence subsistence for fisher households.

In the 17th and 18th centuries, many Sami households were fishers as their main occupation. An intriguing question is how it was possible to support a household on fishing in an area with low-productive waters given the existing relatively inefficient fishing methods, especially when it was not enough for households to be self-sufficient. They also had to amass a surplus of dried fish for paying taxes and trading. What strategies, and thus institutions, did households need to secure a satisfactory fish harvest from year to year?

In order to analyze fishing strategies and who had the right to harvest fish, one also needs to understand the rules and norms that regulated fishing and how they changed from the mid-17th century to the end of the 18th century. The rules and the ability of households to rely on fishing were influenced, for example, by the composition of fish

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species, the conditions in the waters that fisher households had access to, and the processes of fishing as a livelihood. Which species of fish were caught? Which methods were used? Who was fishing? Where and when did they fish? What did they do with the fish they caught?

All resources used by humans are embedded in complex social-ecological systems (SES) that need effective governance for sustainability (Ostrom 2009; see also McGinnis and Ostrom 2014). Users invest time and energy to make a difference in outcomes. Hence, it is important to discuss how decisions were made during our study period regarding the right to fish and who was involved in these discussions and decisions.

The Sami's right to use land for hunting, fishing, and reindeer grazing is a highly contentious political question in present-day Sweden. The dearth of political agreement has resulted in several lengthy court proceedings during the 20th and 21st centuries between Sami representatives and private landowners and the state. This article contributes to the discussion about the nature of Indigenous people's rights to water by focusing on early modern strategies for freshwater fishing. Despite the colonial project within Sweden, we argue that Sami were to a high degree self-governing regarding fishing resources and devised their own institutions for management in the 17th and 18th centuries.

In the source materials, many different terms were used to describe actors who engaged in fishing. For consistency, we have chosen to call them *users*, in the sense that they were users of resources and rights, wanting to avoid connotations that terms like *owner* and *tenant* might have for readers today.

In the first section of this article, earlier research in the field is examined, and our theoretical framework, methods, and sources are explained. The second section provides an in-depth discussion of how fishing was performed, and the third section analyzes the rules regulating fishing. Theoretically, these sections are organized according to Ostrom's (2009) SES framework. The last section concludes with a discussion of the results.

Background

Most research about fishing as a CPR has been concerned with large-scale fishing in the open seas. The start of the modern debate about collective-action problems and overharvest of commonly used resources were H. Scott Gordon's (1954) seminal work about the fishing industry. He argued, 14 years before Hardin (1968) made the concept "tragedy of the commons" widely known, that resources will be depleted when "natural resources are owned in common and exploited under conditions of individualistic competition" (Gordon 1954:124). While open-sea fisheries still face many challenges, and the depletion of vital resources is an imminent threat, research about inshore fisheries has shown that collective-action problems have been solved in many cases. One example is James Acheson's (1988, 2003) studies that show how fishers in Maine, USA, managed to devise institutions for a sustainable inshore lobster fishery. Another example is Ostrom's (1990) meta-analysis of CPRs that led to her widely known design principles for sustainable use.

Even though the large-scale fishery has attracted the most attention in fisheries science and policy worldwide, small-scale fisheries actually have many more practitioners and half of the world's wild-caught fish production (Basurto et al. 2020; Smith and Basurto 2019). In research on fishing, the focus has generally been on the harvest, but as Basurto et al. (2020) point out, to understand and analyze the complexity of a fishery, one needs to include all the work that precedes and succeeds harvest: negotiations of access rights, maintenance of gear, preservation of fish, taking fish to markets, and the like. All of these activities include more people than those taking part in the harvest and have an impact on a fishery.

Research about CPRs also has generally paid less attention to freshwater fishing than sea fishing. One reason might be that excluding users in sea fishing is harder than in lakes. Nevertheless, harvests of fish in lakes and streams have been very important for people worldwide, especially many Indigenous groups who depend on freshwater fishing. For them, the household's subsistence has often revolved around strategies to secure fish harvests (Bennett et al. 2018; Needs-Howarth and Cox Thomas 1998; Rapalje Martin 1989).

In a Sami context, research has primarily focused on sea fishing along the coast in northern Norway (e.g., Bjørklund 1991; Brattland 2010; Hansen 2006; Nielssen 1986). Fishing in lakes and streams differs in many ways from fishing in the open sea, yet parallels can be drawn between the two due to certain cultural factors shared among Sami households. Some anthologies that describe freshwater fishing by Sami (e.g., Fjellström 1986) focus mainly on methods and gear from prehistoric times to the 20th century. However, they only discuss fishing as an economic strategy in general terms and do not try to define any rights to fish. Hultblad (1968) reviewed land use and users' rights to resources in Lule lappmark based on court records from the same time period as our research. His findings are mostly descriptive rather than analytical, but the details of the area's resource development contributed valuable input to our analysis.

Some new research has emerged about Sami inland fishing that provides a discussion of fishing

as an ecologically strategic resource in precolonial households (Norstedt and Östlund 2016; Norstedt et al. 2014). In these studies, historical and ecological methods are combined to describe the environmental settings for precolonial Sami land use. The environmental data were used to learn more about what roles different natural resources played in the inhabitants' sustenance. For us, the results chiefly contribute useful knowledge about the historical-ecological frames for inland fishing.

Theoretical Framework

Fishing can be described as a social-ecological system where users interact with nature. The resources are fishing waters and are considered CPRs. What distinguishes a CPR is that it is difficult, but not impossible, to exclude users and the catch or harvest is subtractable (Ostrom 2005). A caught fish cannot be harvested by someone else; hence, there is potential for overuse. Institutions (i.e., rules that regulate access to fishing waters) are thus necessary, and defined rules are especially important in an environment with low-productive waters. Rules were also necessary because, in these waters, households had to optimize the catch in order to survive on fishing, and maximum sustainable yields were only achievable if there was some kind of institution in place that regulated each household's access to fishing.

On a day-to-day basis, users had to make decisions about issues such as where to fish, what gear to use, and who was going to participate. On a higher level, rules had to establish boundaries between different users in order to decide who had the right to fish where. These decisions were impacted by natural conditions, the attributes of the communities, and the rules-in-use (Ostrom 2005). The rules about fishing in mid-17th-century Lule lappmark were created in a self-governing context (i.e., the users developed their own institutional arrangements for regulating, monitoring, and implementing resource use) (Larsson and Päiviö Sjaunja 2020; Ostrom 2005).

Some of these rules were nested in national legislation, and, regarding fishing, the most important link was established between taxes and fishing rights (Norstedt et al. 2014). The state had connected the right to use specific land and water to the tax, and, as long as the tax was paid, users had the right to fish in certain lakes within these *lappskatteland* (tax lands) (Arell 1977:67, 129). However, even though the state was authorized to tax the inhabitants, the actual use (proprietorship) of land and water, the rules for, and the practice of everyday fishing in interior northern Sweden was decided by local users. Any changes in these rules mainly reflected changes in the households' economy and new power dynamics in the local community.

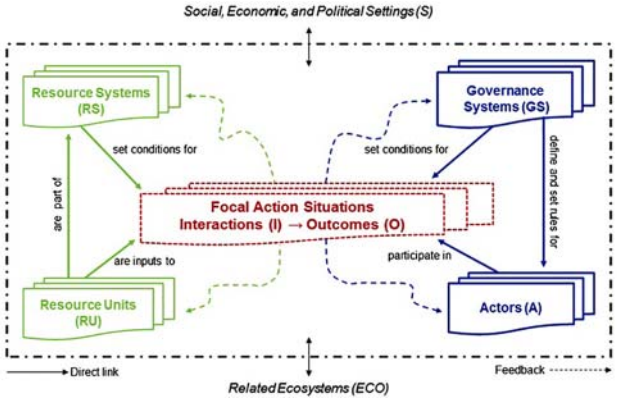

Figure 1. Social-Ecological System (SES) framework with multiple first-tier components. Adapted from McGinnis and Ostrom (2014).

We use Ostrom's SES framework to organize the inquiry (Ostrom 2009; see also McGinnis and Ostrom 2014). The SES framework was created for the analysis of closely coupled social-ecological systems and is used to identify and analyze the relationships among multiple levels of these complex systems. Hence, the SES framework helps us understand complexity. At the core of the framework is the action situation where Actors are in positions to make choices among available options that affect the Outcome (Fig. 1). The decisions are affected by first-tier categories: Resource systems, Resource units, Governance systems, and Actors. Actors also include third parties (e.g., the local court) and are not restricted to the users of the fishing waters. The details of the case study in this article are organized along these categories to facilitate a discussion about how Actors interacted and the implications for the Outcome of the system. The second tier of the SES framework digs deeper and consists of broad sets of variables that are attributes of the first-tier categories. For example, Human-Constructed Facilities might be part of a Resource System, or Operational Rules would be part of a Governance System. We chiefly discuss the second-tier variables Social Performance Measures and Ecological Performance Measures as they relate to Outcome. The Methods and Sources section includes important information about the first-tier variables Social, Economic, and Political Settings.

Methods and Sources

Our research focused on Lule lappmark (Fig. 2), where early modern inhabitants had access to fishing in rivers, lakes, and streams in both the boreal forest and alpine zone. The focus on Lule lappmark was driven by the presence of highly useful

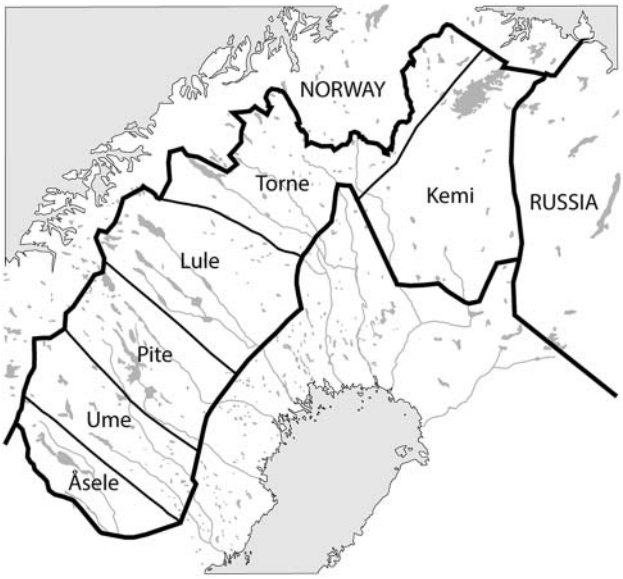

Figure 2. The Swedish lappmark in the 18th century (adapted from Charta öfver Wästerbotten och Svenske Lappmarcken, https://commons.wikimedia.org/wiki/File:Västerbottens_län_och_svenska_lappmarken_1796.svg).

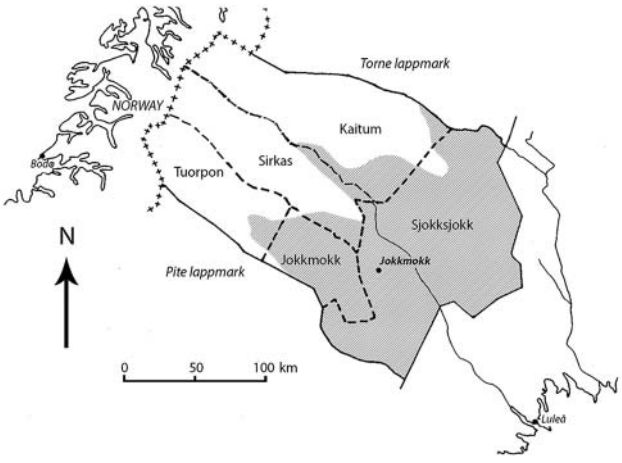

Figure 3. Map of Lule lappmark ca. 1760, showing borders between Sami villages Sjokksjokk, Jokkmokk, Tuorpon, Sirkas, and Kaitum. The shaded and white areas represent the boreal forest and mountain regions, respectively. Adapted from Kvist (1989:16) and Sveriges National Atlas (2011:34–35).

transcripts of rulings from *Häradsrätten* (the local court). From the mid-17th century, Lule lappmark was divided into five *lappbyar* (Sami villages): Sirkas, Tuorpon, Sjokksjokk, Jokkmokk, and Kaitum (Fig. 3). All Sami lived in these villages, which were fairly large districts and social communities.

The early modern *Häradsrätten* was an arena where users could bring unresolved conflicts regarding natural resource management to have them settled. A fundamental feature of the court was its lay dominance, where conflict resolution was a bottom-up process (Korpiola 2014; Larsson 2016; Larsson and Päiviö Sjaunja 2020; Österberg et al. 2000). In fact, Korpiola (2014) argues that this lay dominance was a cornerstone of the Swedish legal cultural identity at that time. Since the courts in interior northern Sweden belonged to the same legal system as the courts in the rest of Sweden, we can assume that the legal culture there was analogous, albeit reflecting local practices in a Sami context. This assumption is reinforced by the fact that *Häradsrätten* in Lule lappmark, at least into the mid-18th century, had 12 Sami lay judges and one Swedish head judge (Korpijaakko-Labba 1994:113; Larsson and Päiviö Sjaunja 2020; Marklund 2015:83). Decisions regarding fishing also were made by smaller user groups (*siidas*), but these decisions do not appear in the sources.

In addition to court rulings, we studied written accounts from both Lule lappmark and other parts of interior northern Fennoscandia (the Scandinavian and Kola peninsulas: Finland, Sweden, Norway, and parts of Russia) that describe fishing in Sami settings. These accounts were written by priests and travelers who either worked temporarily in or journeyed through the area in the late 17th to mid-18th centuries. The accounts offer many useful details about fishing (e.g., how and when it was implemented), while the court rulings tell us more about rules that governed fishing.

Clergymen from the Christian Lutheran church provided meticulous narratives of Sami life—beliefs, economy, and more. The assemblage of these accounts was part of the state's ambition to gather more information about northern Sweden and its inhabitants. We also used two travel accounts that were written in the 18th century by Linnaeus ([1732]1961) and Ehrenmalm (1743). They were both young explorers sent to Lapland at the behest of scientific academies in Uppsala and Stockholm. A mutual goal for the state and the academies was to collect information that would reveal how this part of the country could be made economically useful. The state's interest in northern Sweden was also driven by geopolitical ambitions.

The Swedish government's colonial ambitions during the early modern period promoted mining enterprises and agrarian colonization, which picked up speed in the second part of the 17th century. However, it was not until the 19th century that those ambitions gained pace, and the Sami population was steadily pushed aside and their rights to land and culture diminished. From 1660 to 1780, decisions regarding land use were made in a self-governing context, and the court

rulings provide an opportunity to access decisions of how fishing waters were governed (Larsson and Päiviö Sjaunja 2020).

A general problem in studies about early modern Indigenous people is that they have left practically no written sources. Only one account has been compiled by an author recognized as Sami: Lundius ([1670s]1905). Hence, the rest of the reports we researched can be used mostly to paint a picture of Sami society as it was perceived by outsiders. Moreover, the accounts do not clarify much about the resource users' attitudes toward one another or representatives from the state.

Through the court rulings, we are enlightened by "hearing" the users' own voices in their arguments and attitudes. The rulings were scripted by a clerk (probably non-Sami) who had been appointed by the state; however, the written records present only summaries of what actually was said during the court proceedings. Most users spoke only Sami, which meant that an interpreter translated to Swedish all that was said in court before the rulings were recorded. For sure, all of this added the risk of information being lost in the process.

The court rulings sometimes contain details about fishing practices that can add to or corroborate information in other sources, specifically the priests' and travelers' accounts. However, we mainly used the rulings to analyze the governance of fishing. In total, court rulings to do with fishing in Lule lappmark make up nearly 80 cases over the period from 1680 to 1780. The majority of them originated in the 18th century and became more frequent in the second half of that century.

We used Hultblad's (1968) compilation of court rulings in Lule lappmark to systematically find cases dealing with fishing. To validate the cases, we compared a sample of his transcripts to the court rulings, and our assessment was that they match well in regard to principal content. Nevertheless, his transcripts are abbreviations of the original records. When we needed more-meticulous descriptions of court cases, we used the originals. In addition, some court rulings contain evidence concerning fishing practices, although most deal with other types of conflicts (e.g., theft or assault). We used information from a few such cases, all of them retrieved unsystematically from the original records.

The authors of accounts and court rulings used Swedish spellings when they transcribed the Sami names of users, fishing waters, and places. Sami language and Sami name traditions are fundamentally different from their Swedish equivalents, which vary considerably in historical sources, and it was probably difficult for contemporary interpreters and authors to get the names right. We transcribed the names in modern Swedish, although we are aware that Lule Sami orthography would have been more accurate and would have added context and familiarity for readers. However, to be useful, such a translation requires a rigorous and tedious approach, which was beyond the scope of this study.

Fishing in Lule lappmark

Resource System and Resource Units

We start with the two first-tier variables in the SES framework that deal with the natural conditions: Resource System and Resource Units. The Resource System was the water body used, and the most important second-tier variables in our study were Clarity of System Boundaries, Size of Resource System, Human-Constructed Facilities, and Productivity of System. Recourse Units were subtracted from the Resource System, and we focused on the second-tier variables Growth and Replacement Rates and Economic Value (Ostrom 2009; see also McGinnis and Ostrom 2014).

There are countless lakes and streams in Lule lappmark, and much of the water begins its journey in the mountain ridge that separates Sweden from Norway before it runs east via streams, lakes, and eventually rivers to the Gulf of Bothnia.

Accounts retrieved from different parts of interior northern Fennoscandia in the 17th and 18th centuries mention, in total, 12 fish species that were caught by the inhabitants (Bergman and Ramqvist 2017; Ehrenmalm 1743:127; Graan [1672]1899:36; Norstedt et al. 2014; Rheen [1671]1897:53; Tornaeus [1670s]1900:61): northern pike (*Esox lucius L.*), European perch (*Perca fluviatilis L.*), common roach (*Rutilus rutilus L.*), European whitefish (*Coregonus lavaretus L.*), grayling (*Thymallus thymallus L.*), salmon (*Salmo salar L.*), brown trout (*Salmo trutta L.*), Arctic char (*Salvelinus alpinus L.*), whitefish (*Coregonus albula L.*), burbot (*Lota lota L.*), ide (*Leuciscus idus L.*), and common bream (*Abramis brama L.*). In Ume lappmark (see Fig. 1), all species but burbot were eaten by the inhabitants (Norstedt et al. 2014).

In Lule lappmark, it was possible to live quite well by fishing in the 18th century if the fisher also hunted, according to Högström ([1747]1980:85). At the same time, fishing and hunting seem to have been serious businesses only for households that were "poor in reindeer" (Graan [1672]1899:35; Högström ([1747]1980:85). Ehrenmalm (1743:127) described in his travel account of Åsele lappmark (see Fig. 1) how fish were plentiful in the lakes and that they were fatter and better than he had seen anywhere else. However, not all species were available in all fishing waters, and some lakes offered no fish at all (Ehrenmalm 1743:127). Moreover, fishing was generally described as very poor in the mountains, with

catches predominantly consisting of Arctic char and brown trout (Norstedt et al. 2014), albeit Linneaus ([1732]1961:93) and Rheen ([1671]1897:54) recorded that harvests in mountain lakes occasionally were considered very good.

Salmon, and northern pike and Arctic char to lesser degrees, were explicitly mentioned in Lule lappmark court cases regarding rights to fish. Two other species were mentioned indirectly as names of lakes—Lake Abborrträsk (European perch) and Lake Mörtsjön (common roach). Lundius ([1670s]1905:18–19) wrote that salmon swam up Lule River all the way to Jokkmokk, approximately 200 km from the coast, and continued even farther when water levels were higher than normal. We conclude, based on evidence from contemporary accounts, that salmon was an important species in Lule lappmark. Each salmon fishing site along the Lule River was listed in an account from the 17th century by priest Samuel Rheen ([1671]1897:64–65). Tornaeus ([1670s]1900:61) stated that salmon was also important in Torne lappmark (see Fig. 1) and that users there primarily fished for salmon in northern Norwegian rivers.

According to Lundius ([1670s]1905:18–19), salmon fishing was not an option in Ume lappmark because they swam no more than about 30 km up Ume River. In their research on Ume lappmark, Norstedt et al. (2014) listed the fish species commonly harvested in the 1670s: northern pike, European perch, common roach, and European whitefish. Additionally, Bergman and Ramqvist (2017), when comparing the share of each species in the harvests, showed that northern pike made up 67% of the catch, European perch 14%, and European whitefish 12%. The percentages were based on information from the 1550s tax records from all parishes in Västerbotten County.

In Lule lappmark, both reindeer herder and fisher households were nomadic during the 17th century, moving between temporary settlements to optimize their access to natural resources. Reindeer-herder households moved seasonally to find good grazing, often over long distances between the mountains in summer and the boreal forest in winter. Fisher households, on the other hand, moved over shorter distances between lakes and streams in the boreal forest (Graan [1672]1899:35; Högström ([1747]1980:98; Rheen [1671]1897:14; Tornaeus [1670s]1900:61). According to the sources, their precise routes were decided by when and where certain species of fish spawned, which could vary in space and time between populations, species, and fishing waters. Moving was thus a way for fisher households to try to optimize their harvests. According to Graan ([1672]1899:35), only exceptionally poor fisher households stayed in the same place year-round.

Some sources described fishers' homes as somewhat permanent hexagonal huts with walls made of boards, brushwood, or peat (Graan [1672] 1899:46; Rheen [1671]1897:15). These huts were built in abundance, especially along the shores of regularly visited fishing waters. Although permanent buildings were common in some places, Högström ([1747]1980:103), who was especially familiar with Lule lappmark, only encountered fishers in moveable tents with canvases made of frieze, similar to those used by reindeer-herder households. He, however, described how fisher households sometimes erected temporary shielings alongside far-off lakes. These shielings were made of peat or brushwood, short-lived construction according to him, and were probably only used to give shelter to a couple of household members for a few days while they fished in the lake.

Sometimes more permanent storage buildings were erected along the households' moving routes, where fishing gear and equipment could be stored. A *stabbur* or *ájtte* (small log building for storage) was, for example, mentioned in a court case from Lule lappmark (HRA VLD 1710:457).

Fishing with available methods likely only rendered plentiful catches when the fish were spawning. Accordingly, Linnaeus ([1732]1961:47) described that fish harvests were especially good in spring and early summer when northern pike spawned. For example, he described that no Sami were present in the church town of Lycksele in Ume lappmark at Pentecost since it coincided with spawning, the Sami's prime harvest time. Lundius ([1670s]1905:29) indirectly corroborated the importance of spring fishing as he stated that the fishing in Ume lappmark was severely hampered in years when spring floods ran extraordinarily high, which, according to him, happened every four to five years.

The importance of spring fishing in the northern lappmarks is linked to the fact that northern pike made up the bulk of the catch for households engaged in freshwater fishing (Bergman and Ramqvist 2017; Norstedt et al. 2014). Consequentially, a poor harvest was probably economically devastating. In years when the conditions for spring fishing were unusually difficult due to high water, the households' harvests of the three economically most important fish species (northern pike, European perch, and common roach) were jeopardized. In Lule lappmark, a poor spring harvest could have been somewhat balanced by good salmon harvests in summer and autumn. Linnaeus ([1732]1961:80) described that salmon, starting at the beginning of May, progressively wandered west in Lule River to spawn before returning, often emaciated, to the Gulf of Bothnia in late autumn. Summer and early autumn were hence the best times for salmon fishing. Another recuperative strategy was probably fishing for

European whitefish, which spawned in various rivers and lakes between September and February.

Actors: Technology Available

The third first-tier variable presented here is Actors, and we start with the second-tier variable Technology Available. Few descriptions of fishing methods exist in contemporary sources. Lundius ([1670s]1905:19) described how all Sami, both poor and rich, had nets for seining (using vertical, weighted nets). And according to Tornaeus ([1670s]1900:61), household members in northernmost Kemi and Torne lappmarks (see Fig. 1) carried their *nootredskap* (seining tools) from one lake to the next, depending on where the fish were spawning. A more detailed description is given by Lundius ([1670s]1905:10) from Ume lappmark, where he recorded that fisher households prepared to *draga not* (seine) in the evening and fished until sunrise (around 2 a.m. in summer). When they came home in the morning, they hung their fishing gear to dry. Thereafter, they boiled and ate the largest fish in the catch. The rest was dried to be eaten, according to Lundius, when they traveled to "church days," which took place in July each year (Fjellström 1986).

Throughout history, seining has been a fishing technique worldwide. The net is dragged through the water from either the shore or a boat and pulled together to form a bag-like container where the fish are caught. The net could also be extended across a narrow water body, such as a creek, stream, or bay, and dragged along the shores from both sides. Based on the sources, the term *not* (seine) was apparently used throughout the Swedish lappmarks in the 17th and 18th centuries, but in specific cases, it is uncertain whether *not* actually meant seine hauling or fishing with stationary gillnets. The terminology seems a bit inconsistent here, albeit stationary gillnets were probably also used extensively during this time. According to a 1709 court case, two users from Sjokksjokk had fished *både med noot och näth* (both with seine and gillnets) when they illegally fished in a lake (HRA VLD 1709:343–344). In accounts written by priests and travelers, the use of *ljuster* (fish spears) is not mentioned explicitly. However, in a court ruling dealing with the distribution of an inheritance from a settler who had been married to a Sami woman, various fishing gear was listed, including *36 famnar* (the equivalent of 64 m) of seine, 16 nets, one fish spear, and one boat (HRA VLD 1701).

Fisher households needed boats to fish. In an account about Ume lappmark, Lundius ([1670s] 1905:9) recorded that boats were both constructed and used by the inhabitants. According to him, the typical boat was light enough for one man to carry on his shoulders. It was made of spruce and jointed by threads from fine spruce roots with a minimum number of nails to keep the weight down. Lundius only mentioned that the boats were used for transport, not for other purposes. However, it seems reasonable to say they also were used extensively for fishing. According to him, the light weight was crucial because the boats had to be carried past rapids. Another interpretation, based on the mobile lifestyle of most fisher households, is that the light weight was just as important for carrying them to remote fishing waters.

Boats that were left unsupervised sometimes were used illegally by others. In one court case from Lule lappmark, a boat left on the south shore of a lake had been used unlawfully by a man traveling to Norway. He had left it on the western shore of the lake, which made it impossible for the boat's owner to harvest gillnets that he had set in the lake. When the owner finally got the boat back, after seven days, his ten old nets had been ruined, together with 20 Arctic char rotting in them (HRA VLD 1699:75). Nets were made of delicate materials (i.e., hemp and flax), and they had to be properly maintained to last.

From Åsele lappmark, Ehrenmalm (1743:128) described three kinds of fishing gear: 1) *ryssjor* (fish traps), 2) gillnets in four mesh sizes, and 3) three types of seining gear. According to him, fishing with hooks and lures was unheard of there.

There are few descriptions of winter fishing in the early modern sources, although fishing probably was a recurring activity for fisher households year-round. Winter fishing was especially strategic if users wanted to catch European whitefish, which spawn from September to February. Lundius ([1670s]1905:12) wrote in one account of ice fishing, without going into detail, that fisher households in Ume lappmark caught enough fish throughout winter to survive. In Lule lappmark, Linneaus ([1732]1961:134) described, possibly from hearsay, how *isnot* (ice fishing with nets) was implemented between *Andersdagen* (Saint Andrew's Day) on November 30 and Christmas. He described how the fishers first made holes in the ice and then pulled the net with a rod under the ice, primarily to catch European whitefish. In Åsele lappmark, Ehrenmalm (1743:128) described how the winter fishing poles were somewhat longer and much thinner than the ones he had seen in Stockholm, a statement that indirectly gives proof that Sami fished during winter. Also, several court rulings mention fishing during winter.

Actors: Socioeconomic Attributes

When examining the second-tier variable Socioeconomic Attributes, we focus on labor division within the household. There is sparse information

about who in a household did what with regard to fishing. Nevertheless, many of the work tasks related to reindeer husbandry, such as milking, guarding, and gathering the reindeer, were performed by both men and women. This was also true for many of the household chores, such as food preparation and cooking. Therefore, it seems reasonable that fishing was also carried out by both men and women. Concurrently, at the end of the 17th century, the provincial governor of Finnmark, Norway (now part of Troms og Finnmark County), described that one difference between Norwegian and Sami fisher households along the northern coast was that Sami women took an active part in fisheries (Hansen 2006).

Two court cases in Lule lappmark also indicate that fishing was a task that could be performed by women. In the first case, from 1701, a settler was using fishing waters belonging to a peasant in Luleå parish without his permission (HRA VLD 1701:411–412). The peasant had given a Sami household permission to fish there. When the wife in the Sami household was net fishing in the lake, the settler had assaulted her with a stick and a horse rein resulting in bloody wounds. Afterward, he had taken her nets; when she found them 14 days later, they were destroyed. A maid who had accompanied her to the lake had witnessed the assault according to the court ruling.

In the second case, from 1712, a man, Olof Andersson, accused a woman, Karin Andersdotter, in Jokkmokk of not letting him use fishing waters that he claimed he had the right to use. Additionally, he accused her of having removed four of his nets from the water (Hultblad 1968:423 case 1067a). These two examples show that the gender division of labor was not as apparent among Sami fisher households as it was among nonSami households. Seemingly, a woman could go fishing with her maid, as well as remove nets that she saw as an intrusion on her fishing rights. An opportunistic strategy for households to optimize their harvests probably was to engage as much of the available workforce as possible during the peak fishing seasons.

Actors: Importance of Resource

Another second-tier variable of Actors that we discuss is Importance of the Resource. Fishing was carried out for many reasons, but perhaps the most important motive was that it was an accessible way to get fat and proteins. Sources describe how fish was the most important foodstuff for users along rivers and lakes in the lappmarks. Ehrenmalm (1743:127) wrote, for example, that fisher households in Åsele lappmark got almost all of their nourishment from fish and that fishing was their only occupation. Furthermore, Linnaeus ([1732]1961:57) wondered how the Sami he met outside Lycksele in Ume lappmark could eat just fish and nothing but fish.

Until the end of the 17th century, it was important for households to have a surplus of dried fish, especially pike, since it was a tax good (Lundmark 1982). Ehrenmalm (1743:128) described that some of the fish was boiled and eaten fresh, some were dried to support the household during winter, and the rest was sold *till sina utskylders betalande* (to pay their debts). Besides the state tax, inhabitants also paid tax to the church, and this was continuously paid in kind with products like dried fish. Additionally, fisher households preferably wanted a surplus of dried fish to use for trade and exchange as a means to obtain goods that were needed in the household. Fisher households exchanged, for example, dried fish with reindeer-herder households for reindeer calves, meat, and cheese (Rheen [1671]1897:19). There was also an annual winter market in Lule lappmark, starting in the early 17th century, where households could trade dried fish for consumer products or money from external tradesmen.

Governance System: Property-Rights System

The last of the first-tier variables described here is Governance System, for which we examine the second-tier variable Property Rights System. The rights to use fishing grounds were put forward by users and the local court during court proceedings. We use the words *right* and *access* interchangeably, as an ability to legally derive benefits, and does not presuppose property (Ribot and Peluso 2003). In an early modern Indigenous setting, the ways users could get access to fishing waters were complex.

In the mid-17th century, land within Sami villages in Lule lappmark was, by and large, divided among households into defined *lappskatteland* (Hultblad 1968:85, 90). They were fairly large and contained fishing waters, hunting grounds, and grazing land for one to a few households. In discussions about early modern Sami property rights, the focus has been on how to interpret rights associated with these tax lands and how these rights developed over time (Holmbäck 1922; Korpijaakko-Labba 1994; Päiviö 2011).

Strong land tenure usually indicates the right to sell land and water. We have not found any cases where fishing rights were sold between Sami users. Only one record mentioned someone selling fishing waters: a case from 1699 stated that two Sami had sold a salmon fishery on the Lule River in the 1670s to a farmer in Lule parish (HRA VLD 1699:86–89).

Inheritance

Inheritance of property is another land right, although not as strong as the right to sell. In most court rulings from Lule lappmark, inheritance is merely implied and clearly mentioned in only a few of them. However, a popular argument among users was that a close relative had used the fishing waters in question.

Only one court record explicitly mentioned inheritance in relation to legal inheritance in Sweden. In 1692, four large lakes and a few small ones were divided between two siblings. The brother inherited two-thirds ("brother's share") and the sister one-third ("sister's share") of the fishing waters. In 1705, a man in Tuorpon, who had obtained the "brother's share," complained that three users in Jokkmokk, who were in charge of the "sister's share," used more fishing waters than they had the right to. The court decided to delineate the borders between them by placing marks in nature that distinguished who had the right to what (user rights). Moreover, the court appointed two trusted men from Sirkas to organize the demarcation in collaboration with the involved users in the upcoming summer (HRA VLD 1705:972–973). A year later, back in court, the agreement was recorded with a description of the borders (HRA VLD 1706:56–57).

Aside from inheritance, fishing waters could also be divided and transferred to relatives while owners were still alive. An example of this was when a man in Sjokksjokk divided his land, including fishing waters, between his son and his daughter's son in 1754 (Hultblad 1968:398 evidence 736 a).

A strong argument for a person to continue using specific fishing waters was that it had been used by him or her for a long time. In 1774, two users were in a conflict over the right to fish Arctic char (HRA JTHA 1774: February 7). In the verdict, the court denied the plaintiff the right to fish at the same site as the defendant. The principal argument was that the defendant, and his relatives before him, had used the site for several generations. Additionally, it was put forward that the plaintiff had access to other locations in the same river where he could fish instead.

Necessity for Survival

Inheritance was a valid argument for users who wanted to gain fishing rights in court, but interestingly, this claim became weaker if the court knew that the fishing waters had not been frequently used by its holder. In such a case, the court sometimes argued that the waterbody would be of better use to someone else, and therefore, assigned it to a user who needed it more. A court case from 1770 illuminates how the court considered inheritance with regard to fishing rights. The dispute concerned two lakes in Sirkas that had been co-owned by several people. Two sons of one of the owners had forwarded the right to fish in the lakes to another man, Anders Nilsson Skubb. The court decided that as long as the rightful proprietors did not use the lakes, Skubb could continue using them. A third lake, for which the sons had not forwarded rights to Skubb, was also discussed in the court case. There, the court decided that Skubb had no right to use the lake since he had never had an interest in it before (HRA JTHA 1770).

The case highlights that the court could accept arguments to do with both inheritance and necessity for survival as grounds for giving someone access to fishing. It also shows that a lake could be split among users.

Users Having Limited Access to Resources

In court, previous use by close relatives was usually a strong argument for giving a user access to fishing waters. However, inheritance was not always enough to gain fishing rights, which the following court case exemplifies. Two users from Jokkmokk shared the right to use certain land (Hultblad 1968:418 evidence 1026a). However, Lars Knutsson from Sjokksjokk claimed that he too could use the land since his relatives had done so before him. In court, the lay-judges stated that the land, with its fishing waters, could sustain only two users, and therefore Lars's claim to it had to be discarded. Thus, the court took limited resources as grounds for rejecting Knutsson's use of the land even though he seemingly had valid arguments based on the inheritance of rights. What counted most for the court, in this case, was that the land did not have the capacity to support three users' livelihoods.

In the case from 1712 described earlier, Karin Andersdotter had removed four nets from a lake that belonged to Olof Andersson (Hultblad 1968:423 evidence 1067a). Andersson argued that his right to fish there was "ancient," and part of the lake was included in his tax land. However, Andersdotter could show records from 1708 and 1711 that showed how her household had paid tax for land that included rights to fish in the lake. A settlement was made in which Andersson got the right to fish in one part of the lake, while Andersdotter and her husband got rights to the rest of the lake with their four fishing grounds.

Almost 50 years later, the same lake was again involved in a conflict. In 1761, three users went to court to prohibit two brothers from fishing in the lake (HRA JTHA 1761:February 16). The plaintiffs' main argument was that the defendants

had access to another fishing water with a good supply of fish. The defendants could show, however, from a 1712 court record that their father had had the right to fish in the southwestern part of the lake. According to that same record, the rest of the lake had belonged to the plaintiff's father, who had paid tax for it. The 1761 court ruling prohibited the defendants from fishing in the lake on the grounds that they had access to good fishing elsewhere, which in this case, evidently took precedence over inherited rights.

Since it was most rewarding to fish during spawning, it is no wonder that some court cases dealt with intrusions during the spawning period. In one such case, the plaintiff was a widow who complained that the defendant had been fishing unlawfully at a spawning site that belonged to her family during spawning in spring and fall (HRA JTHA 1775:February 8). She testified that her family had always used the fishing site, while the defendant claimed that he too had a right to fish there during spawning. The court, however, denied the defendant any rights to fishing at the particular site, arguing that he had access to other fishing sites that he could use *mest alla årstider* (practically all seasons).

Users Obtaining Access to Fishing Waters

In some cases, Sami households that did not have access to fishing waters could obtain user rights by the court. In one such case, a man, Per Jönsson, in Jokkmokk who did not have access to land or fishing waters, was granted access to two *sel* (still waters) in Lule River by the court (HRA JTHA 1767:179). Although the two river stretches already had rightful owners, the court's argument for granting Jönsson access to them was that they were not directly attached to the owners' main property. In fact, they were closer to a land that belonged to Jönsson's father-in-law and had *av gammalt* (since ancient times) been associated with that property.

Another argument as to why the court granted Jönsson access was that he needed the fishing sites more than the owners did. A third argument might have had to do with the collective tax system that was established in 1695 when Sami villages became responsible for paying state tax instead of the individual households (Kvist 1990). For a Sami village, it thus became advantageous to have as many members as possible with good incomes that could contribute to the total tax levy. Users without land, or with too little land to support their household, could therefore be granted land or water, assuming of course that the resources were available. Hence, a new user could contribute to the collective tax that the village had to pay (Arell 1977:63).

Delineation of Boundaries between Users

A common way to resolve disagreements regarding fishing was to determine which waters belonged to whom and then mark the boundaries. In 1732, the plaintiff, a man in Tuorpon, complained in court that two users had been fishing illegally in a lake belonging to him (HRA JTHA 1732:February 8 and 1733:February 10). He argued that it was particularly troublesome that the defendants had used a spawning site. Since the court could not easily resolve the matter, two of the lay-judges were assigned to investigate the matter further. They were instructed to visit the lake with both the plaintiff and the defendants to gather as much information as possible. Since the court only convened once a year, the plaintiff had to wait a year for the court ruling; meanwhile, the users were told to carry on as before. In next year's court, the lay-judges reported what they had learned so the court could make its final ruling. According to the court ruling, the plaintiff and the defendants agreed upon a division of the lake, which in turn was based on a solution that had been suggested by the lay-judges. A border was set between the two parties, stretching from the inflow of a creek to an island in the lake. The plaintiff got the right to fish on the south side and the defendants on the north side.

Another example of how land could be divided between users comes from 1726 when two lands in Tuorpon were divided among 12 users (HRA VSLD 1726:February 7, 409–410; Hultblad 1968:356 evidence 18a). Judging by their names, some of them were probably related. In court, the hostility among them was described as a "slowly growing" conflict, and that it was about time each of them got his or her share. The court appointed four trusted men to delineate land and fishing waters and emphasized that it was important that they carefully consider how land and water had been used by the 12 users' ancestors.

The trend in the court rulings was that the division of lands, and thus fishing waters, continued throughout the 1700s and became even more prevalent in the second half of the century (Hultblad 1968). The result of this process was that more households obtained access to fishing waters, but the water area per household decreased, which implies that the subsistence base for each household decreased.

Nevertheless, it is important to keep in mind that not all conflicts resulted in the division of lands or fishing waters. Often the court had no problem deciding who was the rightful user, and the intruder could be fined and prohibited from fishing. For example, the court decided, in 1700, that a man had to pay 40 silver coins (*dalers*) if he continued to encroach on the plaintiff's fishing waters (HRA VLD 1700:261). According to an

older court ruling, from 1696, the defendant was the sole user of the lake. Another example comes from 1702, when the plaintiff, a man in Jokkmokk, complained that another man, from Sjokksjokk, had spent the last two summers fishing in a lake on the plaintiff's tax land (HRA VLD 1702:536–537). He argued in court that this had impaired his livelihood. The defendant was not present in court, but his son was. He had accompanied his father when they had fished in the lake, and he claimed that his father had some sort of inherited right to the lake but that he did not know any more details about it. When asked if his father had paid tax for the land, he admitted that he had not. The defendant was sentenced to pay 40 *dalers* and was prohibited from returning to the lake until he could prove that he had a right to be there.

Sharing of Fishing Waters

Fishing waters were not always divided among users; some conflicts were solved in other ways. Users sometimes agreed to share waters among themselves, while other aspects to do with fishing rights could be clarified in court. In February 1731, discord arose between two users, Nils Nilsson and Pål Jonson Stoorropare, in Sjokksjokk concerning the right to use certain fishing waters (HRA JTHA 1731:88–89). In court, Nilsson and Stoorropare agreed to share the fishing waters, but *vara rådande över halva noten var* (each would be in charge of half of the seine). In addition, one of them was allowed to use the other's seine in return for a small remuneration. More importantly, neither was allowed to invite others, not even relatives, to fish in the lake.

In 1737, a new argument for not dividing fishing lakes between users was put forward in court (Hultblad 1968:413 evidence 959d). This case also involved Nilsson and Stoorropare from the case above but included one more person and another two lakes. As established in court earlier, the first lake was to be used jointly by the two aforementioned users, and a second lake was to be used only by Stoorropare. The third lake belonged to a third user, and when Stoorropare fished there, he was sued. In court, Stoorropare claimed that this lake had more fish than the other two lakes, which was confirmed by other rights holders and by some of the lay-judges who had knowledge about these lakes. All three users agreed that their ancestors had used the lakes together, and the lakes belonged to a property that their ancestors had held in common. The court, therefore, decided that all three lakes should be used jointly by the rights holders, in part because the land had been used in common in the past but, more importantly, because the lakes contained unequal amounts of fish. It was thus impossible to divide the fishing rights in these waters in a just way.

Temporal Division of Fishing Rights

Most divisions of fishing waters were made through spatial delineation between users. However, the right to fish could also be divided temporally; users could, for example, be given the right to fish only during a limited period. In 1773, a court case between a settler and a Sami man from Tuorpon regarding fishing in a certain bay resulted in time-based delimitations of their access to the fishing there (HRA JTHA 1773:February 10). The court gave the Sami the right to fish in late fall and spring when it was possible to *racka* (ice fish with gillnets). In practice, this probably meant that he targeted European whitefish, which commonly were caught via ice fishing during the spawning season (Linnaeus [1732]1961:134). In late spring, the right to fish passed to the settler. It meant that he most likely targeted northern pike, which spawn after the ice melts.

In this case, the temporal division of fishing rights was an interaction between a settler and a Sami. However, there are at least two examples of temporal division between Sami users. In a case from 1714, two users in Jokkmokk had a conflict over fishing rights in a creek at the western shore of a lake (HRA VLD 1714 § 10:1058–1059). During the court proceedings, they agreed, with a handshake, to share the creek by dividing the use temporally. One of them could fish in the creek from Christmas to mid-February (the end of the market season), and the other could fish there for the rest of the winter for as long as he could use his *våner* (fish traps). In another case, from Sjokksjokk, a dispute had been developing over time between two users on one side and three users on the other side (HRA VSLD 1726:February 7, 411–412). The dispute revolved around the division of land and *rättigheter* (rights) to two fishing waters. The dispute regarding land was settled by defining an exact border between the users. Regarding the fishing, the users decided to divide the access to the water temporally so that each party could fish every other year. The exception was one particular bay, which the first two users got the right to use exclusively.

Fishing Rights Decoupled from Grazing Rights

From the mid-18th century, court cases show how fishing rights could be separated from the right to use land for grazing. For example, two users, Henrik Jansson and Pål Eriksson Tulpa from Tuorpon, had owned grazing land together (Hultblad 1968:372 evidence 297a) that included Parajaure Lake and a few smaller lakes for fishing.

In 1756, the court awarded the lakes to Eriksson. Two years later, the court changed that decision, so Jansson got the right to fish in Parajaure, with the restriction that he could not allow others to fish there.

In 1771, the court decided that two users in Tuorpon would lose their rights to use land for grazing because they had no reindeer. Nevertheless, they could continue to use the fishing waters (Hultblad 1968:369 evidence 252a). Instead, the grazing rights went to another user, but the court emphasized that he *fick ej tränga dem i fisket* (could not intrude in the fishing). The notion that one property should offer both grazing and hunting lands and fishing waters for a household had obviously disappeared by then. The right to fish was still a defined right, but it could be decoupled from other rights on a particular property.

Conclusion/Discussion

Based on our use of the SES framework, the local court was an arena where many policy decisions affected the Outcomes of Resource Systems. The second-tier variables of Social Performance Measures and Ecological Performance Measures were impacted by the decisions about which resource areas users could access (McGinnis and Ostrom 2014).

It is evident from the sources that the tax lands in the boreal forest in Lule lappmark were relatively large in the second half of the 17th century and that they included various sizes of hunting grounds, grazing land for reindeer, and fishing waters (Hultblad 1968:85, 90; Norstedt 2011; Norstedt et al. 2014). They were fairly large because they roughly comprised the resources a village of households needed to make ends meet in an economy that mostly depended on fishing. Norstedt et al. (2014) have shown that the water bodies associated with tax lands in Ume lappmark in the late 17th century contained, on average, five fish species per territory and that the mean was 13 fishing waters per territory. The mean area per water body was 36 km^2. Since different populations of the same fish species can spawn at different times in different places, they conclude that it was beneficial for fisher households to have access to as many fishing waters as possible and move from one to another. Moreover, the organization of territories was recognized by the state through taxation (Norstedt et al. 2014). However, tax lands gradually became divided among individual users during the 18th century. With smaller lands, and thus fewer and smaller fishing waters, it became harder for households to make a living on fishing. The difference in living standards between reindeer-herder households and fisher households that existed in the 17th century gradually increased, and the 18th-century sources generally described fisher households as poor or very poor. The strategies used to survive on fishing were 1) a mobile lifestyle to optimize harvests, 2) pre- and postharvest fishing activities that facilitated good harvests, and 3) well-defined institutions that regulated access to fishing waters.

Fishing Strategies in Low-Productive Waters

In the 17th and 18th centuries, most fisher households in interior northern Fennoscandia had a mobile lifestyle, which meant that they moved between fishing waters following a yearlong route that probably was quite similar from year to year. In some regions, households erected more or less permanent huts to live in by lakes they regularly visited, while households in other regions often lived in moveable tents. All households but the poorest kept small herds of reindeer that they used mainly for transportation and milking. The crucial reason behind this fishing nomadism was that it was an opportunistic strategy that allowed inhabitants to *optimize* resource utilization of mainly low-productivity fishing waters. The spawning periods were principally the only times when low-productivity waters had high yields, particularly in view of the available but not especially efficient fishing techniques. By moving around, households could adapt their fishing schemes to different fish populations and lifecycles, which varied between different waters (Norsted et al. 2014).

Extreme spring flooding was an imminent risk that could be devastating for fishing (Lundius [1670s]1905:29). It was additionally hazardous economically since spring also corresponded with the spawning period for some of the most important fish species. Spring was thus the only time of year when these species were high yielding. If spring fishing failed, households undoubtedly had to put more energy into fishing for other species later in the year.

Pre- and Postharvest Activities

To survive on fishing, most of a household's work had to revolve around this activity. Hunting was merely a complement, and households did not have large herds of reindeer. From studies of small-scale inshore fisheries in Mexico, Basurto et al. (2020) pointed out the importance of pre- and postharvest activities. This also was true for fishers of interior Fennoscandia to harvest enough fish in low-productivity waters. Gender division in the household was not strict, and both men and women could engage in fishing. The court rulings describe women fishing, rowing boats, and defending their household's fishing waters from encroachments. The sources contain less information about gender division in pre- and postharvest

activities. However, we know these activities took more time than the harvest, and in a household-based economy, all members needed to contribute. Only one court ruling regarding fishing mentioned a maid. Taking into account that most fisher households are described as poor, it seems likely to conclude that it was unusual for them to have servants, and most of the work was performed by family members. In large-scale reindeer herding, having servants was necessary (Larsson and Päiviö Sjaunja 2020).

The crafting of fishing gear and boats was an important part of preharvest work, which included collecting or purchasing raw materials and constructing fishing equipment, such as binding nets. In the postharvest phase, maintaining and mending equipment, such as nets and seines, was a time-consuming and ongoing task. Gear that was not properly handled and maintained could easily decay, which in turn would increase costs for the household. Moreover, postharvest work included taking care of the harvest—preparation of fish to be eaten directly and drying of fish to be used for later consumption, trade/exchange, or paying taxes.

The pre- and postharvest activities also included negotiations with neighbors about fishing rights, travel to fishing sites and markets, and the like. Gathering more detailed descriptions of pre- and postharvest activities is an important area for further research since they contribute to our understanding of fishing strategies among Sami and in small-scale fishing communities around the world.

Institutions for Management

Fishing waters are CPRs. Without rules about management, there is a risk of overutilization and fish depletion. The investigation of court rulings from Lule lappmark shows that the users in a self-governing context created rules for sustainable use of the fishing lakes by defining user groups and user areas. However, with access to only low-productive waters and low-yielding techniques, the real challenge for most households was to secure sufficient harvests for survival. The problem they had to handle was not primarily the risk of overharvesting but of how to limit the number of users. Hence, policy discussions regarding fishing waters concerned the boundaries of the resources and who had the right to harvest (Ostrom 2005).

In the 18th century, the population increased (Hultblad 1968), and most tax lands were divided into smaller units. When fishing waters were assigned to new owners, negotiations were made among all presumptive users. Advantageous arguments for users who wanted legal rights to specific fishing waters included inheritance or past use by their relatives. But claiming this was not enough; users also had to back up their arguments if contested. The most effective claim, then, was that he or she relied entirely on fishing or lacked access to other fishing waters.

Because the right to use fishing waters could be negotiated in the local court, it became a collective-choice arena (Ostrom 2005, 2009), defining *who* could use a certain fishing area and sometimes *when* it could be used. Not only were the users defined, but considerable effort was also put into defining the exact boundaries between users if a lake or river had to be divided.

Fishing waters in Lule lappmark became a collective resource because it was within the power of the local community to decide who had what rights. In this process, the lay-judges also were important Actors because they often were familiar with the area and its history. Users got well-defined areas where they could fish, and a household could have the exclusive right to fish in an area. In that sense, the territory used by an individual household had similarities to private property: users had strong tenure, and rights to fishing waters could be passed on to the next generation. Other users were not allowed to fish there unless an agreement was made between the parties. When a fishing area was shared between households, they could be forbidden to allow other people to fish.

This collective activity points to another important second-tier variable of the Actors: Norms (trust-reciprocity)/Social Capital within the society (McGinnis and Ostrom 2014). The absence of secure user rights would have undermined trust among the inhabitants and, in the end, trust in the local court as a collective-choice arena. The design of a sustainable fishing regime was, to a large extent, an internal question for the users. The local strategy consisted partly of excluding other users and defining boundaries between fishing waters, as well as having an arena for solving conflicts. The fishing Resource System was under the control of the local users, and the distribution of fishing rights was a collective responsibility. Social justice is important for effectiveness in governing CPRs and does not rely solely on distributive outcomes. It also includes institutions and governing, such as involvement in decision making (Jentoft 2013). As a collective-choice arena where rules were crafted and enforced, the court was an important part of social justice. This type of involvement was lost in the 18th century when many decisions about land use were moved from the local court to a government agency.

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